a good deal of the work of Drs. Clark and Scripture in connection with the epileptic voice, and he could corroborate what had been said regarding its peculiarities. The character of the voice in epilepsy was so uniform that the diagnosis of the disease could frequently be made on that basis alone.

Dr. B. Sachs asked whether these voice peculiarities described by Dr. Clark were observed in recent cases of epilepsy or only in the chronic or very old cases. Also, whether the voice was confined to those cases that had been more or less thoroughly bromilized. The monotony of the epileptic voice must surely in the end be due to insufficient vibration of the vocal cords, or perhaps a slowness of vibration, and that we would expect to find in patients who were under the influence of the bromides.

Dr. E. W. Scripture said that while it was rather early to speak of the voice changes in paralysis agitans, they were distinctly different from those observed in epilepsy. In both affections the speech was monotonous in character, but otherwise they were different. The spaker thought it was quite possible to walk through the wards of the institution on Ward's Island and distinguish the various cases of epilepsy by the voice alone. The voice of imbeciles was also quite distinctive.

Dr. Edward D. Fisher said that in the three cases of epilepsy shown by Dr. Clark, the patients were of a low type of mentality. The speaker said that in epileptics of a higher type, those who were able to be about and conduct their business affairs in a satisfactory manner, he had never noticed any changes in the voice, and he was inclined to believe that such changes were an evidence of mental deterioration.

THE GALVANOMETER IN PSYCHOLOGY.

By Frederick Peterson, M.D.

The author said the discovery by Féré in 1888 and Tarchanoff in 1890, and the rediscovery by an electrical engineer in Zurich very recently of the influence of emotions on the galvanometer was at present arousing some attention here and abroad among those interested in normal and morbid psychology. The bibliography of the subject and the results of the investigations last winter by Jung and Peterson were published in the July (1907) number of *Brain*. The speaker showed an instrument which thus far had given the most satisfaction in these researches, and he hoped to demonstrate its utility as a measurer of the emotions so far as that was possible with a test person in the same room with a large number of people. Anticipation, apprehension and embarrassment might interfere with the experiment. The instrument was the mirror galvanometer of Duprez-d'Arsonval, made by Carpentier of Paris. (Model A, suspension thread 0.08 mm., duration of simple oscillation 1.69 second; resistance 6.2 ohms.) By means of an arc light the reflection from the mirror was thrown on a screen 12 to 14 feet away, so that every one in the room might note the deviations of the mirror. This was only for purposes of demonstration. For scientific use the light reflected upon a millimeter scale about a meter from the galvanometer, and a sliding index connected with a pen made a permanent record on a kymograph. An effort was being made to secure an automatic recorder such as was used in the cable offices, and if that could be perfected it would prove a most valuable adjunct to the apparatus. The test person was put in the circuit with the galvanometer and one dry cell, and a shunt was also employed to regulate the amount of current. The electrodes were nickel-plated copper upon which the hands or feet might rest. The speaker said he had used one electrode of carbon and another of zinc, in which case a cell in the circuit was unnecessary. The fluctuations observed in the light were due to varying resistance in the skin. Moving the fingers or lifting the hand caused the light to recede because of increased resistance. Very strong pressure might diminish the resistance and cause the light to advance. Such muscular movements were readily detected after some experience with the instrument, and did not complicate or interfere with the movements due to the emotions. He had tried water contact, which excluded changes due to varying pressure. If the hands were blanched with an Esmarch bandage, the deflections were not affected. If they were completely dried by immersion in formalin, the resistance was so great that fluctuations did not occur. A deep inspiration or a deep expiration or coughing would cause a deflection, whereas ordinary respiratory movements did not affect the light. All of these influences were readily distinguishable by practice. If a test-person was placed in the circuit and every possible stimulus avoided, we obtained a rest curve, which was characterized by first a considerable deflection and then a slow recession of the curve to almost nothing, which was quite contrary to our ordinary experience with cutaneous resistance. When any stimulus was applied, sensory or psychic, we had after a latent period of from two to five seconds a rise in the curve, and then a gradual fall to the previous level. It was noted in Dr. Peterson's experiments that expectation or anticipation, that embarrassment and apprehension caused fluctuations. A sudden sensory stimulus aroused attention, so that all of these stimuli had a psychic element. As to the actual practical value of this instrument in psychology, the speaker said we had at least in it a new instrument of precision which was more accurate and certain than any other employed in psycho-physical investigation, such as the pneumograph, the plethysmograph, ergograph, etc. It promised to have a field of usefulness in all conditions in which study of the emotions or emotional complexes was of importance, as for instance in neurasthenia, hysteria, certain mental disorders, suspected criminality and malingering. As yet it was too new and untried, however, to permit of claiming so much as established. The psychometer might ultimately do more than we expected, or it might do less than we at present surmised. The explanation of its action was not yet clear. So far as we knew now, the deviations of the galvanometer were due to variations in resistance of the skin through an intimate connection of the sweat-secretory system with the nervous system, perhaps through the medium of the sympathetic nervous system. Yet it was also quite possible that some extra electro-motive force either from the tissues or from the cutaneous surface was added to the electromotive force of the single cell employed in demonstration.

PRELIMINARY REPORT ON THE WORK OF THE POLIOMYELITIS COMMITTEE.

By B. Sachs, M.D.

Dr. Sachs premised his remarks by stating that the committee was working in conjunction and entire harmony with a similar committee appointed by the Pediatric Section of the New York Academy of Medicine and a representative of the New York Health Department. The work